ALBERTA SPECIAL OILWELL BOILER PRACTICE TEST (SAMPLE)

STUDY GUIDE

SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

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How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

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Questions

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1. What is the maximum allowable iron concentration in OTSG feedwater?

A. 0.1 ppm

B. 0.01 ppm

C. 1.0 ppm

D. 0.001 ppm

2. Which expression best represents the typical amines used for feedwater pH control?

A. MORPHOLINE

B. CYCLOHEXylAMINE

C. MORPHOLINE OR CYCLOHEXylAMINE

D. AMMONIA

3. What unit expresses sulfite residual in boiler feedwater?

A. ppm as SO3

B. mg/L as SO3

C. % as SO3

D. ppb as SO3

4. What is the maximum flame failure response time allowed?

A. 1 second or less.

B. 4 seconds or less.

C. 8 seconds or less.

D. 6 seconds or less.

5. Maximum lift pressure differential between SRVs.

A. 1%

B. 2%

C. 4%

D. 3% (or 20 psi, whichever is greater)

6. Typical water level in a mud drum unit

A. Center of sight glass (50%)

B. Top of sight glass

C. Bottom of the mud drum

D. 50% water level in sight glass

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7. PWHT stands for which process?

A. Post-Weld Heat Treatment

B. Pre-Weld Heat Test

C. Pressure Weld Heat Transfer

D. Post-Welding Hazard Test

8. What is the purpose of the coil tell-tale holes?

A. Detect through-wall cracks by leaking steam

B. Vent steam during startup

C. Drain condensate

D. Measure coil temperature

9. Which document must be on site for every registered Special Oilwell Boiler (white copy) and current ABSA decal?

A. Annual safety plan

B. AB-83 Inspection Report

C. Operator training certificate

D. Maintenance logbook

10. Where can silica carryover cause deposits if not controlled in feedwater?

A. In the feedwater pump

B. On the boiler tubes

C. In the condensate lines

D. In turbine or formation

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Answers

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1. B
2. C
3. A
4. B
5. D
6. A
7. A
8. A
9. B
10. D

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Explanations

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1. What is the maximum allowable iron concentration in OTSG feedwater?

A. 0.1 ppm

B. 0.01 ppm

C. 1.0 ppm

D. 0.001 ppm

Iron in OTSG feedwater must be kept extremely low because iron ions and oxide particles readily form on heat-transfer surfaces at the high temperatures of a once-through boiler. When iron oxidizes, it tends to deposit as iron oxides on tubes and in tubesheets, reducing heat transfer efficiency and creating sites for localized corrosion. In an OTSG, where there's vigorous flow and high heat flux, even small amounts of iron can lead to scale, fouling, and accelerated corrosion, increasing the risk of tube damage. Keeping the iron concentration at or below 0.01 ppm minimizes these deposition and corrosion risks, which is why this is the specified limit. Achieving this requires effective pretreatment and monitoring—such as filtration and deaeration—so that iron entering the boiler remains at or below this very tight threshold. The other values would permit more iron, leading to greater potential for fouling and damage, so they're not suitable as a standard for OTSG feedwater.

2. Which expression best represents the typical amines used for feedwater pH control?

A. MORPHOLINE

B. CYCLOHEXylAMINE

C. MORPHOLINE OR CYCLOHEXylAMINE

D. AMMONIA

In feedwater pH control, you use volatile amines that ride along with the steam into the condensate and feedwater system to keep the pH alkaline and protect metal surfaces from corrosion. The two amines most commonly used for this purpose are morpholine and cyclohexylamine. They vaporize with steam, travel to the condensate lines, and buffer the condensate against the acidity formed from dissolved CO2, while also helping form a protective film on metal surfaces. Because either one can be effective, systems often use morpholine or cyclohexylamine, or a combination of both, depending on the specific water chemistry and corrosion-control goals. Ammonia is another volatile amine, but morpholine and cyclohexylamine are the typical choices favored for condensate pH control due to their pairing of volatility with corrosion-protective properties.

3. What unit expresses sulfite residual in boiler feedwater?

A. ppm as SO3

B. mg/L as SO3

C. % as SO3

D. ppb as SO3

Sulfite residual in boiler feedwater is reported as ppm as SO3. In boiler water chemistry, concentrations are typically given in parts per million to reflect the amount of a chemical per million parts of water, and the "as SO3" qualifier specifies the chemical form used for the measurement. For dilute aqueous solutions, 1 mg/L is essentially the same as 1 ppm, but the standard practice is to express sulfite residual specifically as ppm as SO3 to indicate the oxide form of the sulfite. Percent and ppb aren't used here because they're not appropriate scales for this trace-level, chemistry-specific measurement, and mg/L would be technically equivalent but isn't the conventional boiler-chemistry default.

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4. What is the maximum flame failure response time allowed?

A. 1 second or less.

B. 4 seconds or less.

C. 8 seconds or less.

D. 6 seconds or less.

Flame failure response time is the maximum time allowed for the flame safeguard to detect that the flame has gone out and to shut off the fuel supply. This safety limit helps prevent unburned fuel from continuing to flow and leaking into the combustion chamber, which could lead to dangerous buildup or an explosion risk. The specified limit is four seconds or less because that duration provides a rapid enough response to stop fuel flow quickly while still being practical for typical burner sensing and interlock systems. Times longer than this increase the chance of fuel accumulation, while a very short requirement could cause unnecessary shutdowns in normal operation. Therefore, four seconds or less is the correct standard.

5. Maximum lift pressure differential between SRVs.

A. 1%

B. 2%

C. 4%

D. 3% (or 20 psi, whichever is greater)

The lift differential is the extra pressure above the valve's set pressure that's needed to move the safety relief valve off its seat to full opening and allow adequate relief flow. In Alberta practice, the maximum lift differential is defined as the greater of three percent of the set pressure or 20 psi. This rule ensures enough lift to provide sufficient discharge across a range of set pressures, while also preventing overly small lift at low set pressures that could cause nuisance operation. For example, if the set pressure is 200 psi, three percent is 6 psi, but 20 psi is the governing value, so full lift occurs at about 220 psi. If the set pressure is 1000 psi, three percent is 30 psi, which is greater than 20 psi, so full lift occurs at about 1030 psi. This standard keeps the valve reliable and capable of relieving at the intended rate across different boilers and pressures.

6. Typical water level in a mud drum unit

A. Center of sight glass (50%)

B. Top of sight glass

C. Bottom of the mud drum

D. 50% water level in sight glass

The main idea is maintaining the water level at the center of the mud drum sight glass. Keeping the level at the mid-point provides a stable hydrostatic head and the most reliable, easy-to-read indication of level. This position minimizes parallax errors when different hands or eyes check the sight glass and keeps the water layer within the calibrated range. If the level climbs toward the top, you risk overflow and unstable readings; if it drops toward the bottom, you lose adequate hydrostatic pressure and proper mud balance. The center of the sight glass corresponds to about 50% and is the standard operating position, rather than aiming for the very top or bottom of the drum.

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7. PWHT stands for which process?

A. Post-Weld Heat Treatment

B. Pre-Weld Heat Test

C. Pressure Weld Heat Transfer

D. Post-Welding Hazard Test

The term PWHT refers to Post-Weld Heat Treatment. After welding, heat is used to relieve residual stresses and temper the heat-affected zone, improving ductility and toughness of the weld joint. This helps prevent brittle failures in service, especially for boilers and pressure vessels made from higher-strength steels or dissimilar metals. The other options don't describe a recognized post-weld process: pre-weld heat treatment would occur before welding, the idea of pressure weld heat transfer isn't an established welding process, and post-welding hazard test isn't a heat-treatment method.

8. What is the purpose of the coil tell-tale holes?

A. Detect through-wall cracks by leaking steam

B. Vent steam during startup

C. Drain condensate

D. Measure coil temperature

Tell-tale holes are a safety feature built into the coil to provide a visible warning of a through-wall crack. When the coil wall fails and steam tries to escape, it will come out through these small holes, giving an obvious steam leak that alerts operators to shut down and inspect the coil before the crack worsens. This is for early leak detection, not for venting during startup, draining condensate, or measuring temperature—those are handled by separate systems and devices.

9. Which document must be on site for every registered Special Oilwell Boiler (white copy) and current ABSA decal?

A. Annual safety plan

B. AB-83 Inspection Report

C. Operator training certificate

D. Maintenance logbook

On-site compliance proof for a registered Special Oilwell Boiler is provided by the AB-83 Inspection Report. This document records the results of the most recent formal inspection by a qualified inspector, notes any deficiencies or required repairs, and indicates the decal's validity period. Keeping the AB-83 on site with the white copy of the boiler registration and the current ABSA decal ensures everyone can quickly verify that the boiler has passed inspection and is authorized to operate. The other documents—annual safety plan, operator training certificate, and maintenance logbook—are important for safety and maintenance, but they do not serve as the official on-site proof of the current inspection status and decal.

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10. Where can silica carryover cause deposits if not controlled in feedwater?

A. In the feedwater pump

B. On the boiler tubes

C. In the condensate lines

D. In turbine or formation

Silica carried with steam ends up where the steam is used, and that is the turbine. When silica makes it into the steam and then condenses or deposits on hot turbine surfaces as the steam expands and cools, it forms hard, adherent deposits on blades and related components. These deposits roughen blade surfaces, reduce efficiency, and can cause erosion or vibration, making turbine damage a serious risk. That's why the primary concern for carryover silica is deposition in the turbine (and its immediate formation), rather than on the feedwater pump or boiler tubes, where silica is less likely to accumulate from carryover. Condensate lines can see deposits too, but the classic, most impactful location from feedwater carryover is the turbine.

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Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

https://albertaspecialoilwellboiler.examzify.com

We wish you the very best on your exam journey. You've got this!

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